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10/661,004	09/11/2003	Marc Van Moeseke	DECLE68.001AUS	7482

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EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,004

Applicant(s)

MOESEKE, MARC VAN

Examiner

Andrew T Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 14 is objected to because of the following informality: The word “consisting” is misspelled. Appropriate correction is requested.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 15 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 15, the specification mentions the claimed conductive polymer (see page 14, lines 3-17), but fails to disclose how to make the claimed conductive polymer.

Regarding claim 19, the specification mentions the claimed joints or weakening points (see page 14, lines 24-31), but fails to disclose how to make a reinforcement element with the claimed joints or weakening points.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claims 1-20, it is not clear what is considered an individual element that is reinforced (see claims 1 and 2). The specification discloses that an “individual element” implies a warp element, preferably a yarn (see page 12, lines 21-22 of the current specification), but the specification does not clearly define what constitutes an individual element that is reinforced.

Regarding claims 3-4 and 20, the word “preferably” or the phrase “in preference” renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claims 13-16, it is not clear how at least one element may be wholly (entirely) electro-conductive and at least partly insulated (see claim 13).

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3-7, 9, 13, 16, 18 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 4,404,889 to Miguel.

Regarding claims 1, 3-7, 9, 13, 16, 18 and 20, Miguel discloses a cut-resistant composite

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comprising a matrix (10 or 22), provided on at least one side with a fabric (16), said fabric comprising at least two layers and/or at least two directions of individual elements of which at least one individual element is reinforced and which elements are interconnected by connection elements (elastomer impregnator) which connection is weaker than the reinforced element (Kevlar) and at least one insulating layer interposed between the matrix and the fabric (14) (see entire document including column 3, lines 32-54 and column 4, line 37 through column 5, line 2).

Regarding claims 3-4, Miguel does not specifically mention the free space volume of the woven fabric, but Miguel does disclose that the fabric is preferably 20% impregnated (column 4, lines 61-67). Therefore, it appears that the fabric of Miguel preferably has a free space volume of about 20%.

Regarding claim 5, Miguel discloses that another insulating layer (18) may be present on the other side of the fabric (column 3, lines 32-54).

Regarding claims 6-7, 13 and 16, Miguel discloses that the insulating layers may comprise steel foils (column 3, lines 32-54). Considering that steel is electrically conductive, it appears that the “insulating layers” are able to act as positive and/or electrical conductors capable of activating an alarm.

Regarding claims 9 and 16, Miguel discloses that the matrix and the insulating layers may be made of metal foils (column 3, lines 32-54). Miguel also discloses that the insulating layers may be made of rubber (column 4, lines 37-60).

Regarding claim 18, Miguel discloses that the individual elements may consist of single ends (column 4, lines 61-68).

Regarding claim 20, Miguel discloses that the composite may be used as a tank floor cover (column 8, lines 22-48).

9. Claims 1-8, 13-15 and 17-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 5,503,879 to Cochran.

Regarding claims 1-8, 13-15 and 17-20, Cochran discloses a cut-resistant composite comprising a matrix (resin matrix), provided on at least one side with a fabric (fibrous component), said fabric comprising at least two layers and/or at least two directions of individual elements of which at least one individual element is reinforced and which elements are interconnected by connection elements (positioning yarn) which connection is weaker than the reinforced element (see entire document including column 1, lines 53-67, column 4, lines 33-59, column 6, line 29, column 7, lines 46-62, and column 8, lines 34-42). The examiner takes Official notice that positioning fibers in unidirectional fabrics are conventionally weaker than the reinforcing fibers of the unidirectional fabric.

Regarding the claimed at least one insulating layer interposed between the matrix and the fabric, Cochran discloses that the fibrous component may comprise multiple layers of fibers wherein the fibers of each layer are parallel or wherein the fibers of each layer are directed in multiple directions (column 4, lines 40-59). Cochran clearly discloses that the fibrous component may comprise a plurality of fabric layers. One (or two) of these fabric layers is considered to read on the currently claimed fabric while the additional fabric layer(s) is considered to read on the claimed insulating layer. It is noted that the current applicant does not limit the material of the insulating layer as long as the insulating layer spatially separates the individual elements of the fabric from the matrix (see page 10, lines 13-16).

Regarding claim 2, Cochran discloses that the fabric may comprise at least two individual layers of reinforcement elements deposited onto each other whereby in each of the individual layers all reinforcement elements are provided in only one same direction (column 4, lines 47-59).

Regarding claims 3-4, Cochran discloses that the fabric may comprise free spaces between the individual elements (column 3, lines 15-41).

Regarding claim 4, Cochran does not specifically disclose the total volume of free spaces, but Cochran does disclose that the fabric may be “so open that it has a substantial “window” between each warp and filling yarn.” Therefore, it appears that Cochran discloses that the free space volume may be between 3% and 99%.

Regarding claim 5, Cochran discloses that the fibrous component may comprise multiple layers of fibers wherein the fibers of each layer are parallel or wherein the fibers of each layer are directed in multiple directions (column 4, lines 40-59). Cochran clearly discloses that the fibrous component may comprise a plurality of fabric layers. The innermost fabric layer(s) is considered to read on the currently claimed fabric and the two outermost fabric layers are considered to read on the first and second insulating layers.

Regarding claims 6-7 and 13-15, Cochran discloses that the fabric layers may comprise metal fibers (column 7, lines 46-62). Considering that metal is electrically conductive, it appears that the “insulating layers” are able to act as positive and/or electrical conductors capable of activating an alarm.

Regarding claim 8, Cochran discloses that the fibrous component may comprise multiple layers of fibers wherein the fibers of each layer are parallel or wherein the fibers of each layer

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are directed in multiple directions (column 4, lines 40-59). Cochran clearly discloses that the fibrous component may comprise a plurality of fabric layers. The innermost fabric layer of the fibrous component is considered to read on the currently claimed at least one insulating layer.

Regarding claim 17, Cochran discloses that the individual elements have an indirect connection with the insulating layer, said connection being created by connection elements (positioning yarns) (column 8, lines 34-42).

Regarding claim 18, Cochran discloses that the individual elements may consist of single ends (column 4, lines 33-59).

Regarding claim 19, Cochran discloses that the composite is flexible and has a weakening point up until the fibers in the matrix are snubbed (column 2, lines 5-33).

Regarding claim 20, Cochran discloses that the composite may be used in luggage, footwear, body protection, boats, portable buildings, greenhouses, highway delineators, buoys and the like (column 7, lines 20-31).

10. Claims 1-2, 5-9, 13-18 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 5,137,766 to Mazanek et al. (hereinafter referred to as Mazanek).

Regarding claims 1-2, 5-9, 13-18 and 20, Mazanek discloses a cut-resistant composite comprising a matrix (thermoplastic matrix), provided on at least one side with a fabric (metal fiber structure), said fabric comprising at least two layers and/or at least two directions of individual elements of which at least one individual element is reinforced and which elements are interconnected by connection elements (polymeric adhesive) which connection is weaker

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than the reinforced element (see entire document including column 2, lines 20-30, column 3, lines 35-41, and column 6, lines 33-35).

Regarding the claimed at least one insulating layer interposed between the matrix and the fabric, Mazanek discloses that the thermoplastic matrix may comprise one or more films (column 5, lines 16-26). One of these thermoplastic films is considered to read on the currently claimed matrix while the additional thermoplastic film(s) is considered to read on the claimed insulating layer. It is noted that the current applicant does not limit the material of the insulating layer as long as the insulating layer spatially separates the individual elements of the fabric from the matrix (see page 10, lines 13-16).

Regarding claim 2, Mazanek discloses that the fabric may comprise at least two individual layers of reinforcement elements deposited onto each other whereby in each of the individual layers all reinforcement elements are provided in only one same direction (column 2, lines 20-30 and column 3, lines 35-41).

Regarding claim 5, Mazanek discloses that the thermoplastic matrix may comprise one or more films (column 5, lines 16-26) and may be applied to both sides of the metal fiber structure (column 4, lines 65-68). The outermost thermoplastic film on either side of the metal fiber structure is considered to read on the currently claimed matrix and the two innermost thermoplastic films are considered to read on the first and second insulating layers.

Regarding claims 6-7 and 13-15, Mazanek discloses that the thermoplastic matrix layers may comprise metal fibers (column 6, line 44 through column 7, line 31). Considering that metal is electrically conductive, it appears that the “insulating layers” are able to act as positive and/or electrical conductors capable of activating an alarm.

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Regarding claim 8, Mazanek discloses that the metal fiber structure may comprise multiple films (column 2, lines 20-30 and column 3, lines 35-41). The innermost film is considered to read on the currently claimed at least one insulating layer.

Regarding claims 9, 16, Mazanek discloses that the thermoplastic matrix, and thus the insulating layer, may be made of material such as PVC, polypropylene, polyethylene, and the like (column 6, line 44 through column 7, line 31).

Regarding claims 13-16, Mazanek discloses that the individual elements may be partly electroconductive (column 2, lines 33-57).

Regarding claim 17, Mazanek discloses that the individual elements have an indirect connection with the thermoplastic matrix, and thus the insulating layer, said connection being created by the polymeric adhesive (column 2, lines 20-30).

Regarding claim 18, Mazanek discloses that the individual elements may consist of single ends (column 2, lines 33-63).

Regarding claim 20, Mazanek discloses that the composite may be used as an electromagnetic cover (column 8, lines 22-48).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,503,879 to Cochran as applied to claims 1-8, 13-15 and 17-20 above, and further in view of USPN 6,138,423 to Poutanen et al. (hereinafter referred to as Poutanen).

Cochran does not specifically mention an adhesive layer on at least one side of the composite, but Cochran does disclose that the composite is suitable for a broad range of products requiring puncture resistance including buildings (column 7, lines 20-31). Poutanen discloses that it is known to apply an adhesive to one side of a building wall composite to allow for the composite to be mounted on a wall (column 3, lines 16-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply an adhesive layer to at least one side of the composite, because the adhesive would allow the composite to be mounted on a building wall.

13. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,137,766 to Mazanek as applied to claims 1-2, 5-9, 13-18 and 20 above, and further in view of USPN 5,714,230 to Kameoka et al. (hereinafter referred to as Kameoka).

Mazanek does not specifically mention the presence of free spaces between the individual elements of the fabric, but Mazanek does disclose that the fabric is to be impregnated with an adhesion promoting substance (column 2, lines 20-30). Kameoka discloses that it is known in the fabric impregnation art to include voids, such as 50-74% void volume, in the fabric to allow the adhesion promoting substance (resin) to sufficiently adhere the films (see column 11, lines 38-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a void volume of 50-74% in the fabric, because the voids allow for sufficient resin impregnation and thus sufficient adhesion strength.

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14. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,137,766 to Mazanek as applied to claims 1-2, 5-9, 13-18 and 20 above, and further in view of USPN 5,244,708 to Tsuchida et al. (hereinafter referred to as Tsuchida).

Mazanek does not specifically mention an adhesive layer on at least one side of the composite, but Mazanek does disclose that the composite is suitable as a film giving a screening effect against electromagnetic radiation (column 8, lines 22-33). Tsuchida discloses that it is known to apply a conductive adhesive to one side of a electromagnetic wave shielding composite to allow for the composite to be mounted on a wall and/or ceiling (column 2, line 54 through column 3, line 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a conductive adhesive layer to at least one side of the composite, because the adhesive would allow the composite to be mounted on a wall and/or ceiling.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atp

g-z. 5/11/05
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